tainly be in such a plight, for he will find in it the minutest instructions for his guidance, and there seems not a *trait* in the character of this and the other freshwater fishes to be ordinarily met with in India that has not been scanned and studied by its author with the intent of beguiling these fishes to their own destruction.

Of the fish to be caught in Indian waters the best is the Mahseer (*Barbus tor*). It is the best from the sportsman's point of view, as it gives him most to do; for who that is a sportsman cares to haul up a dead pike on a night-line? and who that is a sportsman but must care for a fish that can attack as follows?—

"The Mahseer has a greater means than our salmon of putting on steam, and has the habit of always putting it on at once, energetically and unsparingly. His first rush is a mighty one, no doubt; that once made, his strength is, in comparison with the northern fish, comparatively soon exhausted. Other rushes he will make, but his first is the dangerous one; then it is that the final issue of the campaign is practically decided. Be one too many for him then, and you may be grimly satisfied that all else he can do will not avail him; you may count on making him your own. Then it is that you must wait upon him diligently. If you have not got all free, the connection between you and your new friend will be severed within a moment of your making each other's acquaintance. If you should have carelessly allowed the line to have got a turn around the tip of your rod, or have let any slack near the hand become kinked ever so little, or twisted over the butt or hitched in the reel or a button, then it is that not one moment's law is given you for the readjustment of such little matters. There is one violent tug, and an immediate smash:

"'The waters wild go o'er your child,
And you are left lamenting.'

Reader, it takes an eye and a hand, and tact and readiness of mind, as well as a rod and a line and a fly, to catch a salmon; but it takes all these, and something more, to catch a Mahseer."

Although it is well known that a fisherman does not catch his fish for the pleasure of eating them—this being quite a secondary matter—still it is fair towards the Mahseer to mention that when in good condition they are excellent, so rich that one needs no condiment with them, so well flavoured as in this respect to occupy a rank between a salmon and a trout. The best size for flavour is between six and seven pounds; but they are good eating when from two to ten pounds in weight; under the former size they are too bony, over the latter too oily.

The chapter on the natural history of this fish is one of the most interesting in the volume, and it is scarcely necessary to add that there are minute details of how to "circumvent" him, of how to spin for him, and of how to tempt him with a fly, and of how, when, and where to fish for him. When we add that over one quarter of the volume is taken up with this fish, it will be evident at once that he ranks as a lord among the freshwater fishes of India; but we have full details also of the Carnatic Carp (*Barbus carnaticus*), a nearly allied species to the Mahseer, running to twenty-five pounds in weight, taking a fly, having a fancy for a No. 5 or 6 Limerick, and giving good sport.

There are also excellent chapters on many much smaller fishes than these—fishes for light rods, and giving very enjoyable sport; several, like the Black Spot, being dwellers in ponds.

Some information is also given as to the attempts made to stock ponds in India, and there is a very full list given of fishing localities. The lithographs which accompany the volume are very good, and several of them are coloured. To the sportsmen of India this work will be quite indispensable and quite a boon, and further, to all interested in the resources of an Empire presided over by our Queen, the volume will afford an insight into the importance of its freshwater fishes that they will find, we believe, nowhere else.

OUR BOOK SHELF

Book of the Black Bass: comprising its Complete Scientific and Life History; together with a Practical Treatise on Angling and Fly-Fishing, and a Full Description of Tools, Tackle, and Implements. By James A. Henshall, M.D. Illustrated. (Cincinnati: Robert Clarke and Co., 1881.)

THE author in this volume endeavours, and we think succeeds, in giving to the Black Bass its proper place among the freshwater game fishes of North America; and undoubtedly the reader will find himself taking an interest in this fish as he reads this enthusiastic account about it. No doubt the first and second chapters will be most tedious reading, and yet they are full of interest as showing how tangled may become the scientific nomenclature even of a well-known fish. As the sum and substance of these chapters we find the two species of the genus Micropterus, standing, the one as *M. dolomieu*, and the other as *M. salmoides*, and it is of these two respectively—the small-mouthed Black Bass and the large-mouthed Black Bass—that the author writes. Both species are very active, muscular, and voracious, with hard and tough mouths, are very bold in biting, and when hooked exhibit gameness and endurance second to no other fish. Both give off the characteristic musky odour when caught. They generally inhabit the same waters. These Black Bass are wholly unknown in the Old World, except where quite recently introduced. Their original habitat is remarkable for its extent, for with the exception of the New England States and the Atlantic seaboard of the Middle States, it comprises the whole of the United States east of the Rocky Mountains, Ontario, and, last, Mexico. Of late years this distribution has been greatly extended. These fish are very prolific, and rapid growers where food is plentiful. In northern waters six to eight pounds is about the limit of their weight, but in Florida they are sometimes met with up to twelve and fourteen pounds. They have been several times imported into England, and we believe that those brought over in 1879 at the expense of the Marquis of Exeter have succeeded well. The fisherman who reads the latter portion of this volume will find many pleasant anecdotes and stories in connection with the gentle art, and should he happen to frequent those waters where the Black Bass are to be found, he will get many a precious wrinkle which he might have otherwise not known. The author's parting injunction is, "Always kill your fish as soon as taken from the water, and *ever* be satisfied with a moderate creel. By so doing your angling days will be happy and your sleep undisturbed, and you and I and the fish we may catch can say—

"'The lines are fallen to us in pleasant places.'"

An Introduction to Determinants, with numerous Examples. By William Thomson, M.A., B.Sc. (Edinburgh: Jas. Thin, 1882.)

THIS text-book is very accurately described by its title. It belongs to a class of which many examples have appeared on the continent for use in the secondary

© 1882 Nature Publishing Group

schools, and of which the object is to give the more common properties of determinants, illustrate the said properties copiously with examples of the second, third, and fourth orders, and give additional examples of the same kind for practice. The object is here on the whole well attained, there being more examples for the pupil than is usual. For a "beginner's text-book," however, it is unquestionably long-drawn-out and expensive. A book (*e.g.* Dölp's, Bartl's, &c.) with very much more matter and, to say the least, as good in quality, would be got in Germany for two shillings, and this costs five. The object of the author "to render an interesting and beautiful branch of mathematical analysis more accessible to junior students" is thus somewhat frustrated at the outset.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

A Glimpse through the Corridors of Time

THE eloquent and exceedingly interesting lecture by Prof. Ball, F.R.S., under the above title, reported in your journal, has brought to my mind a short, far too much forgotten paper by Immanuel Kant. With your permission I will give a few extracts from this paper, which cannot but be interesting to many of your readers. Kant became subsequently very celebrated in a sphere of human knowledge usually considered far removed from natural science, in consequence of which his papers relating to this science are now almost universally overlooked. Nevertheless some of them contain extraordinary glimpses of truth a century or more in advance of this time, glimpses possible only to genius.

The paper to which I wish more particularly to draw attention was published in 1754, when Kant was thirty years of age. It will be found in the collected works edited by F. U. Schubert and K. Rosenkranz (Leipzig, Leopold Voss, 1839, vol. vi. p. 4). The paper relates to the question whether the length of day has altered, and through what cause. In this paper Kant states: "If the earth were a perfectly solid mass, without any liquid, the attractions of the sun and moon would not alter the rate of rotation round the axis. . . . If, however, the mass of a planet includes a considerable amount of liquid, the united attractions of the sun and moon, by moving this liquid, impress upon the earth a part of the vibrations thus produced. The earth is in this condition." He then goes on to state that the moon produces the greatest effect, and, the tide running round the earth in a direction opposed to that of rotation, "we have here a cause, on which we can count with certainty, incessantly reducing this rotation by as much as it may be capable of." A little further on he says: "When the earth steadily draws nearer and nearer to the end of its rotation, this period of change will be completed when its surface is, relatively to the moon, at rest; *i.e.* when it rotates round its axis in the same time in which the moon revolves round it, and will, consequently, always show the same face to the moon. . . . If the earth were entirely fluid the attraction of the moon would very soon reduce its rotation to this minimum. Herein we at once see a cause why the moon always shows the same face to the earth. . . . From this we may conclude with certainty that when the moon was originally formed, and still fluid, the attraction of the earth must, in the manner above described have reduced the speed of rotation, which then in all probability was greater, to the present measured limit." I have given only a few short abstracts, and I have no doubt that mathematicians may find many faults in the paper, but it is nevertheless clear that Kant had recognised the influence of tidal action, both on the earth and on the moon, and has given a glimpse through the corridors of time a century earlier than any of the authorities mentioned by Prof. Ball.

After Kant it was, I believe, R. T. Mayer, of Heilbron, who, long before Prof. Helmholtz drew attention to the influence exerted by the tidal wave on the rotation of the earth.

Westminster Hospital, December 5, 1881 A. DUPRÉ

Dante and the Southern Cross

I HAD supposed the query—in reply to which I ventured to offer the very brief note which was printed in NATURE (vol. xxv. p. 173)—to have proceeded from some English reader, unacquainted with the various solutions of the difficulty involved in the question, which have been suggested, and who might have been satisfied with a reference to such a discussion of the matter as that in the "Cosmos," by a critic in whom were united all the needful qualifications to a degree which can hardly be looked for elsewhere.

Dr. Wilks appears to have written with a similar impression in referring the querist to the commentary of the late distinguished Dantophilist, Dr. H. C. Barlow, whose fervid belief in the extent of Dante's knowledge ("ottimo Astronomo, summo Teologo") could not be exceeded by the most ardent patriotism, and was never qualified by the judicious reservation which Signor N. Perini admits. What I venture to add, refers to the notes which have appeared, rather than the original query as I understood it.

For a solution of the apparent paradox in Humboldt's retaining the old view of the sense of "prima gente" while accepting —not Galle's "opinion," but—the result of his computations as to the visibility of the stars of the Southern Cross to the earlier inhabitants of Europe, I would refer Signor N. Perini to the earlier and much fuller development of Humboldt's views, contained in the last twenty pages or so of vol. iv. of the *Examen Critique de l'Histoire de la Geographie Moderne*, where, at the same time, will be found a great deal of valuable and suggestive information relative to the Arabian celestial globe theory, and also to the probability (the words "non viste mai . . ." notwithstanding) of Dante having derived some knowledge of the constellations of the southern hemisphere from the description of "Les voyageurs pisans ou vénitiens qui visitaient l'Egypte, l'Arabie et la Perse." But I would at the same time urge that the whole of what is said in the "Kosmos" on the subject of the Southern Cross is not intended to be applied to the Dante question, but to the larger one of the progress of oceanic discovery, and that it was in connection with this larger topic that Humboldt availed himself of Dr. Galle's computations. Dr. Barlow appears to have been misled by failing to notice this distinction in his enthusiastic letter to the *Athenæum* (September 1860) of which the article quoted by Dr. Wilks from the volume of "Contributions to the Study of the Divina Commedia" is a condensation.

Count St. Roberts's essay, to which Signor N. Perini refers, is probably little known, and not easily obtained, in England; but we may conjecture that its object was to argue against the supposition of the element of ecclesiastical mysticism—hateful to modern Italian liberalism—as entering into the Divina Commedia and affecting its imagery and modelling. If the essay had thrown any new light on the subject of the query, we may conclude Signor N. Perini would have imparted it to us. However, I believe that everything that can be found to throw light on this interesting question has been adduced and weighed with the dispassionate calmness of a master mind, as it is set forth with candour and perspicuity in the exhaustive discussions to which I have referred. In conclusion may I remark on the importance, in such correspondence as we have been engaged in, of quoting the original words of an author—with or without translation, as may be thought proper. In the quotation, as from "Cosmos," by Dr. Barlow, given by Dr. Wilks and the passage is re-quoted by Signor Perini—nonsense is made of a sentence by "da" being rendered "since," instead of "whereas." In the same translation "mit vieler Orientalischen Reisenden aus Pisa" is improved into "with many *learned* Oriental travellers of Pisa." Such changes might sensibly affect any argument founded on the passages. For the same reason I would have preferred heading this correspondence "Dante and the quattro stelle." J. J. WALKER

University Hall, December 31

A Pet Baboon

I KNOW not if the inclosed account, written by a friend of mine now resident at Zanzibar, for whose accuracy and truthfulness I can answer, is worthy of a place in your columns.

JULIA WEDGWOOD

"You ask after my quaint little pet baboon, and I really must give you the history of her end. She grew and she grew till

© 1882 Nature Publishing Group